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EUCRYPHYCUS, A NEW GENUS OF CALIFORNIA EELPOUT (TELEOSTEI: ZOARCIDAE) BASED ON *MAYNEA CALIFORNICA* STARKS AND MANN, 1911

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ABSTRACT: The composition of *Maynea* Cunningham, 1871 has had a confused history and formerly included species currently recognized in five genera. Herein, *Maynea* is considered monotypic, including only the littoral Magellanic *M. puncta* (Jenyns, 1842), which is redescribed. The confusion stems from earlier work uniting eelpouts without pelvic fins while emphasizing overall similarity based on symplesiomorphies. The genus *Eucryphycus* is erected for the persimmon eelpout, *E. californicus* (Starks and Mann, 1911), on the basis of a combination of character states that ally it as a primitive sister taxon with *Lycenchelys* Gill, 1884, and relatives. These character states include features of the palatal arch, hyoid bar, suspensorium, occipital (supratemporal) commissure, gill slit, and suborbital bone chain.

Eucryphycus californicus is a deep-dwelling, coastal species that occurs over mud bottoms and hides in patches of decaying vegetation where it feeds primarily on gammaridean amphipods. Nesting probably occurs in this habitat as well. *Maynea puncta*, on the other hand, primarily occurs in the rocky intertidal zone and kelp stands and is most closely related to a group of nine endemic, Magellanic genera.

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INTRODUCTION

Cunningham (1871) established the genus *Maynea* for a littoral eelpout species (*M. patagonica*) of the "Magellan Province," or cold-temperate South America (Regan 1914; Briggs 1974). Membership of the genus has had a confused history. Species currently recognized in *Bothrocara* Bean, 1890, *Gymnelopsis* Soldatov, 1922, *Oidiphorus* McAllister and Rees, 1964, *Pachycara* Zugmayer, 1911, and another presently unnamed (based on "*Melanostigma*" *microphthalmus*), have been formerly assigned to *Maynea*. This confusion stemmed from an artificial lumping of species without pelvic fins and overemphasis of plesiomorphic characters, and, as currently constructed, the genus is monotypic (Anderson 1984*a*). Confusion has persisted with regard to the name of the South American species, originally given by Cunningham (1871) as *Maynea patagonica*. Jordan and Davis (1891) indicated this species was identical with *Conger punctus* Jenyns, 1842. I have examined Jenyns's holotype and concur that Jordan and Davis's overlooked nomenclature (*Maynea puncta* [Jenyns, 1842]) for the species is correct. Gosztonyi (1977) briefly redescribed the species (using the name *M. patagonica*), on the basis of four specimens.

C. H. Gilbert discovered a unique eelpout specimen among the 1904 California collections of the U.S. Fish Commission from 419 to 545 m off San Nicolas Island. Thinking his species was related to the South American form, Gilbert

prepared a new species description for his specimen, naming it *Maynea californica,* but publication was somewhat delayed (Gilbert 1915). Meanwhile, Starks and Mann (1911) used Gilbert's name and gave a brief description of the species. Following Article 50(a) of the International Code of Zoological Nomenclature, the authorship of *M. californica* must be attributed to Starks and Mann (Hubbs et al. 1979).

Most references to *M. californica* have been limited to brief descriptions or citations in checklists and keys, and all have incorrectly given Gilbert (1915) when citing authorship (Jordan et al. 1930; Barnhart 1936; McAllister and Rees 1964; Fitch and Lavenberg 1968; Eschmeyer et al. 1983). Cailliet and Lea (1977) provided detailed information on the biology and distribution of *M. californica* based on over 1,200 specimens caught in Monterey Bay between 1972 and 1975. These specimens formed the basis of an unpublished master's thesis (Kliever 1976), which provided a more complete description of the submarine canyon habitat and biology of *M. californica* than that given by Cailliet and Lea (1977). A comparative anatomical study of *Maynea* and putative sister taxa revealed major osteological differences between *M. puncta* and *M. californica* (see Anderson, 1984*a*).

The purpose of this paper is to erect a new genus for *M. californica* and redescribe it and the monotypic *M. puncta* on the basis of recently collected material. My earlier methodology (Anderson 1982, 1984*a*) is used to establish a detailed anatomical basis from which other problematical southern hemisphere zoarcid genera may be discussed in the future.

Methods and Materials

Measurements were made with an ocular micrometer or dial calipers to the nearest 0.1 mm. Osteological observations were made on cleared and stained specimens (Dingerkus and Uhler 1977) and drawings made with the aid of a camera lucida. Definitions of characters and measurements follow those of Gosztonyi (1977) and Anderson (1982, 1984*a*). Character state modifiers are based on those numerically scored characters of Anderson (1984*a*). Museum abbreviations follow Leviton et al. (1985).

The following specimens were examined in detail; counts were taken from radiographs of all known specimens of *Maynea puncta,* 30 specimens of *Eucryphycus californicus* from CAS 38674, and all specimens of *E. californicus* from VIMS 05806. Measurements are in standard length (SL).

Maynea puncta

BMNH 1869.5.3.25 (holotype of *M. patagonica*; 153 mm); Otter Isl., Straits of Magellan, Chile; Magellan Survey, 1867–1869. BMNH 1917.7.14.12 (holotype of *Conger punctus*; 78 mm); Beagle Channel, Tierra del Fuego; Charles Darwin, 1833. VIMS 05783 (1; 149 mm, cleared and stained); Ushuaia, Argentina; intertidal coll., A. Gosztonyi; 23 Nov. 1968. AMNH 5016 (1; 139 mm); Argentina, no specifics; shore coll.; 1900. LACM 10722-1 (1; 250 mm); Isla Desolación, Chile; 52°56′S, 75°00′W; ELTANIN sta. 958; 92–101 m; 5 Feb. 1964. LACM 10724-1 (1; 78 mm); Straits of Magellan, Chile; 52°40′S, 74°58′W; ELTANIN sta. 960; 64 m; 6 Feb. 1964. LACM 43712-1 (1; 29.5 mm); Isla de los Estados (Staten Isl.), Argentina; 54°55′S, 64°00′W; HERO sta. 875; 0–903 m (surface capture?); 27 Oct. 1971. LACM 43713-1 (8; 62–123 mm); Isla Dawson, Chile; 53°51′32″S, 70°25′52″W; USARP shore coll., sta. 69-24; 1.5–3.0 m; 18 May 1969. LACM 43723-1 (1; 115 mm); Punta Santa Ana, Penin. de Brunswick, Chile; 53°30′48″S, 70°50′33″W; USARP shore coll., sta. 69-9A; 0.3–0.6 m; 16 Apr. 1969. LACM 43728-1 (1; 92 mm); Isla de los Estados, Argentina; 54°53.7′S, 65°27.4′W; HERO sta. 689; 12–13 m; 15 Oct. 1971. MACN 1847 (3; 57–114 mm); Isla de los Estados, Argentina; SAN LUIS. MACN 2686 (1; 198 mm); off Ushuaia, Argentina; BAHIA BLANCA; 17 Apr. 1941. SIO 74-109 (1; 76 mm); Merle Cove, Argentina; 54°47.8′S, 64°00.5′W; kelp bed; 9 May 1973.

Eucryphycus californicus
(all Monterey Bay specimens studied are from area centering on 36°48′N, 121°48′W in 130–143 m)

SU 22399 (paratype; 85 mm); off San Diego; San Diego Biological Association; 1907–1911. VIMS 05806 (16; 48–173 mm, cleared and stained); Monterey Bay. CAS 17623 (7; 35–184 mm); Monterey Bay. CAS 38674 (52; 66–200 mm SL); Monterey Bay. CAS 38711 (19; 75–225

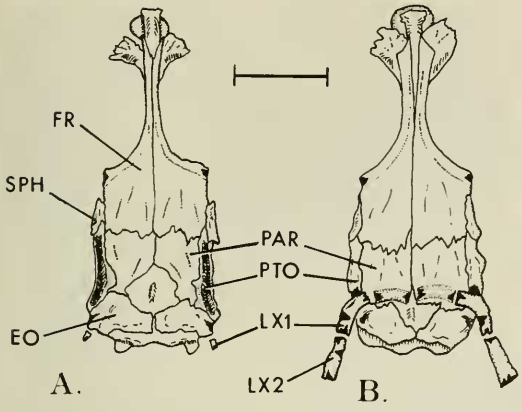

FIGURE 1. Dorsal view of neurocrania of A) *Maynea puncta*, VIMS 05783, 149 mm SL, and B) *Eucryphycus californicus*, VIMS 05806, 173 mm SL. Abbreviations: EO, epioccipital; FR, frontal; LX1, first and LX2, second, lateral extrascapulars; PAR, parietal; SPH, sphenotic.

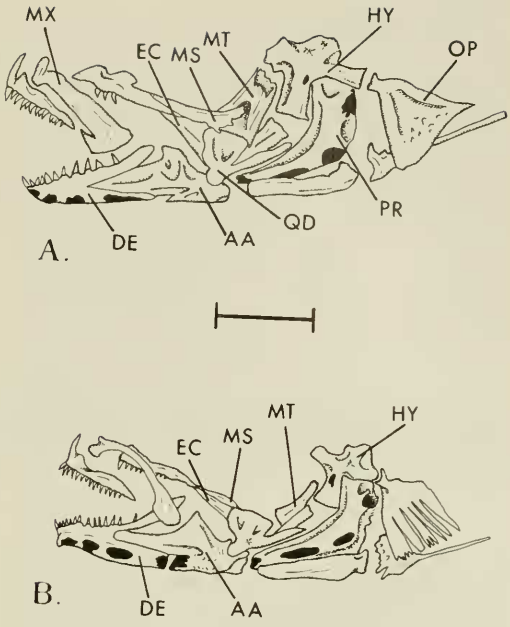

FIGURE 2. Left lateral view of jaws, suspensoria and opercular bones of A) *Maynea puncta*, VIMS 05783, 149 mm SL, and B) *Eucryphycus californicus*, VIMS 05806, 173 mm SL. Abbreviations: AA, anguloarticular; DE, dentary; EC, ectopterygoid; HY, hyomandibula; MS, mesopterygoid; MT, metapterygoid; MX, maxilla; OP, opercle; PR, preopercle; QD, quadrate.

mm); Monterey Bay. CAS 39572 (1; 92 mm); off Pt. Conception; 34°22.4′N, 120°25.8′W; VELERO IV sta. 25875; 183 m; 20 Mar. 1977.

Maynea Cunningham, 1871

(Figures 1A, 2A, 3A, 4A)

Maynea Cunningham, 1871:471, 472 (type species: *Maynea patagonica* Cunningham, 1871 [=*Conger punctus* Jenyns, 1842], by monotypy); Günther 1881:20, pl. 11, fig. C, D; Jordan and Davis 1891:663; Lahille 1908: 438, 439, fig. 8; Norman 1937:108; McAllister and Rees 1964:105–108 (partim); Gosztonyi 1977:220–223, fig. 12.

DIAGNOSIS.—Palatal arch well developed, with ectopterygoid and mesopterygoid overlapping half or more dorsal and anterior margins of quadrate; ceratohyal-epihyal juncture with bone interdigitating; hyomandibular posterior ramus elongate; five branchiostegal rays; gill slit restricted, extending ventrally to midpectoral base or above it; vertebrae 27–31 + 87–100 = 117–130; occipital (supratemporal) commissure and bony passage in parietals absent; one lateral extrascapular; two postorbital pores; eight suborbital bones; with six suborbital pores.

Maynea puncta (Jenyns, 1842)

DIAGNOSIS.—As for genus.

COUNTS AND MEASUREMENTS.—Vertebrae 27–31 + 87–100 = 117–130; D 116–129; A 91–105; P 13–16; pelvics absent; C 6–10; pseudobranch filaments 3–5; gill rakers 1–3 + 8–11 = 9–13; branchiostegal rays 5; vomerine teeth 0–4; palatine teeth 1–4; premaxillary teeth 6–13; dentary teeth 7–17. Following measurements in percent SL: head length 12.6–17.9; predorsal length 11.8–16.0; preanal length 34.0–39.8; body height 6.9–9.4; pectoral fin length 6.4–9.8; caudal fin length 0.7–1.5. Following measurements in percent HL: head width 38.4–67.8; upper jaw length 34.2–45.2; pectoral fin length 47.3–58.8; body height 47.2–68.4; snout length 17.0–23.6; eye diameter 19.9–27.7; gill slit length 18.7–27.1; interorbital width 8.3–12.8; interpupillary width 18.6–23.4. Pectoral base/length ratio 39.8–56.0.

DESCRIPTION.—Head relatively small, ovoid, juveniles with more rounded snout and relatively larger eye than adults. Widest portion of head midway between eye and gill opening, but sexual dimorphism in head length or width not statistically detected in present sample ($n = 21$), owing to predominance of juveniles. Late juveniles and adults with head length 12.6–15.5% SL; 29.5 mm hatchling with head length 17.9% SL. Body relatively elongate, laterally compressed, but this less pronounced in largest adults. Tail greatly elongated, increasingly laterally compressed posteriad. Skin firm, covering vertical fins. Scales minute, cycloid, imbedded, covering body (ex-

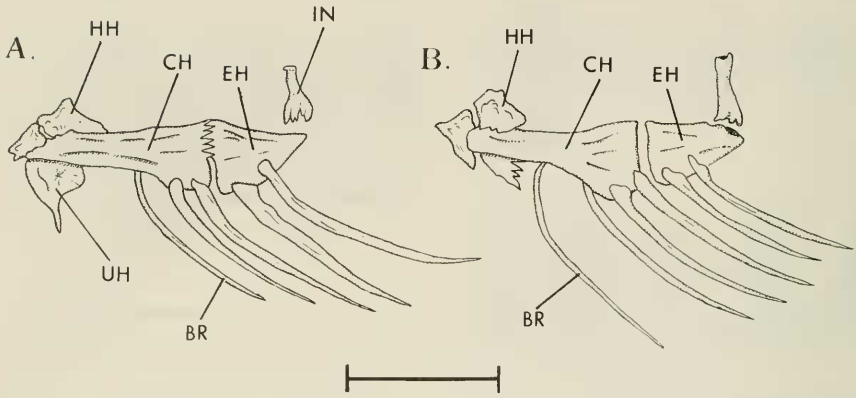

FIGURE 3. Left lateral view of hyoid bars of A) *Maynea puncta,* VIMS 05783, 149 mm SL, and B) *Eucryphycus californicus,* VIMS 05806, 173 mm SL. Abbreviations: BR, branchiostegal ray; CH, ceratohyal; EH, epihyal; HH, hypohyal (dorsal); IN, interhyal; UH, urohyal.

cept on ventral surface of abdomen) and tail, including vertical fins; scales absent on head and nape. No scales in 29.5-mm SL hatchling, and those on body of next largest specimen (57 mm SL) extend in wedge-shaped pattern anteriorly from vertical through anus to gill opening. Lateral line mediolateral (Andriashev 1954), complete, extending from just posterior fourth postorbital pore to tail tip, not bowed anteriorly. Eye moderate, rounded in juveniles, somewhat ovoid in largest adults; eye longer in relation to head in juveniles than adults. Nostrils single, at snout tip, nasal tube not reaching upper lip. Pectoral fin moderately large, posterior margin evenly rounded, its origin just ventral to body midline; pectoral base extending ventrally to abdomen; middle rays longest, ventralmost not thickened or excised at tips; juveniles with relatively longer fin than adults. Gill slit restricted, extending ventrally to midpectoral base or above (opposite pectoral rays 2–7).

Mouth terminal, lips without lobes; mouth rel-

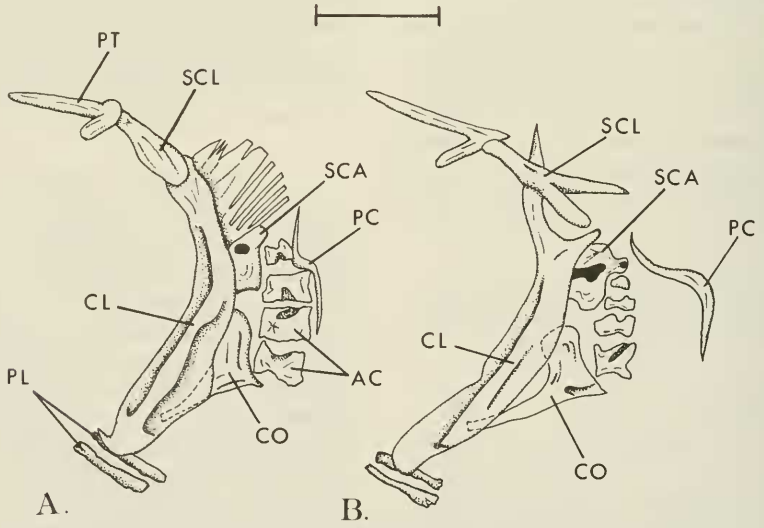

FIGURE 4. Left lateral view of pectoral girdles of A) *Maynea puncta,* VIMS 05783, 149 mm SL, and B) *Eucryphycus californicus,* VIMS 05806, 173 mm SL. Abbreviations: AC, actinost; CL, cleithrum; CO, coracoid; PC, postcleithrum; PL, pelvic bone; PT, posttemporal; SCA, scapula; SCL, supracleithrum.

atively small, upper jaw extending posteriorly to vertical through middle of eye or its posterior margin. Upper jaw length apparently sexually dimorphic, but only one adult of each sex known; largest known male (250 mm SL) with jaw 45.2% HL, largest known female (198 mm SL) with jaw 38.3% HL. Largest fish with two rows of small, conical teeth on anterior portion of both jaws, blending into single, posterior row. Outer, anterior teeth of both jaws slightly larger than innermost; no sexual dimorphism in dentition. Teeth relatively few on vomer and palatine bones.

Cephalic lateralis pores enlarged, rounded, relatively larger in smallest juveniles; pore system moderately reduced, present sample with no numeric variation in pore counts. Occipital (temporal) and interorbital pores absent. Two pairs of nasal (anterior supratemporal) pores, one set anteromesial to nasal tube, the other set posteromesial. Eight preoperculomandibular pores, four emanating from dentary, one from anguloarticular, and three from preopercle. Six suborbital pores, all emanating from ventral ramus of suborbital chain. Postorbital pores one and four present emanating from frontal (first) and lateral extrascapular (fourth). Parietal bones large, meeting in midline, with no trace of tubular canal for commissure (Fig. 1A). Supraoccipital large, widely separated from exoccipital by epioccipitals. Postorbital commissure a troughlike depression in pterotic. Single pair of small lateral extrascapulars (anteriormost) at posterolateral edge of neurocranium.

Palatal arch strong, ectopterygoid and mesopterygoid with posterior surfaces overlapping more than half anterior and dorsal margins of quadrate (Fig. 2A). Hyomandibular posterior ramus elongate. Opercle, subopercle, and metapterygoid relatively large and well ossified.

Ceratohyal-epihyal juncture with bone interdigitating dorsally (Fig. 3A). Branchiostegal rays five: three articulating with ceratohyal and two with epihyal. Ceratobranchial five dentigerous; three pairs of infrapharyngobranchials and tooth plates. Gill rakers blunt, triangular, 9–13 total; largest specimens with 3 epibranchial rakers and 10–11 on first ceratobranchial.

Posttemporal ventral ramus well developed (Fig. 4A). Supracleithrum simple, broadened at midlength. Cleithrum with dorsal, poorly ossified lamina. Scapular foramen enclosed; scapular posterior ramus moderately well developed. Single postcleithrum present. Four ossified actinosts bearing 13–16 pectoral fin rays. Pelvic fins absent, pelvic bones normal size.

Vertebrae nonequiamphicoelous (asymmetric); precaudal vertebrae usually 29 or 30, caudal vertebrae usually 96–99. Epipleural ribs on vertebrae 1–18, occasionally to vertebra 21. Pleural ribs on third through ultimate or, less often, penultimate precaudal vertebra. Dorsal fin origin associated with first, rarely second, vertebra, with no free pterygiophores. All dorsal fin elements soft rays. Two to five anal fin pterygiophores inserted anterior to haemal spine of first caudal vertebra. Last dorsal ray associated with third or fourth preural vertebra. Last anal ray associated with second preural vertebra; often two anal rays attached to its associated pterygiophore, which is fused to haemal spine. Caudal fin rays 6–10, with 1–2 (usually 2) epural rays, 3–4 upper hypural, and 2–4 (usually 3) lower hypural rays.

Palatine membrane (oral valve) well developed, overlapping anterior margin of vomer. Three to five relatively long pseudobranch filaments. Two nublike pyloric caeca, generally longer in smallest specimens.

Present collections indicate that two color morphs exist. The commoner, characteristic of specimens caught in nearshore and littoral waters, is banded. These forms have 12–16 wide brown bands extending across the body and tail onto the fins (less extensive on anal) on a pale yellowish or whitish background, and the occiput has a pale, transverse band. The other morph, characteristic of specimens taken in offshore waters, is monotone brown with gray areas on cheeks, jaws, and gill isthmus region, sometimes with light mottling on head. Pectoral fins grayish with white edges (Gosztonyi 1977).

Distribution and Habitat.—Known from inlets of southern Chile, around Tierra del Fuego and the Falkland Islands, from the intertidal zone and subtidal kelp stands to the outer continental shelf in depths to 101 m. Capture records indicate the species has no substrate preference, being taken in tidepools with varying amounts of algal cover to mud bottoms of the outer Chilean shelf. One hatchling, 29.5 mm SL (LACM 43712-1) from a Blake trawl fished at 771–903 m, probably was caught as the net surfaced, since this depth is excessive and planktonic larvae (with durations up to two weeks) are known in some eelpouts (Anderson 1984*b*).

Eucryphycus gen nov.

(Figures 1B, 2B, 3B, 4B)

Maynea (non-Cunningham, 1871). Starks and Mann 1911:16–18; Gilbert 1915:362–364, pl. 19, fig. 17; Hubbs 1916:166; Barnhart 1936:91, fig. 275; McAllister and Rees 1964:107

(partim); Cailliet and Lea 1977:253–261, fig. 1, 2; Eschmeyer et al. 1983:106, pl. 11.

TYPE SPECIES.—*Maynea californica* Starks and Mann, 1911.

DIAGNOSIS.—Palatal arch reduced, ectopterygoid and mesopterygoid not overlapping half of dorsal and anterior margins of quadrate; ceratohyal-epihyal juncture smooth; hyomandibular posterior ramus normal; six branchiostegal rays; gill slit extending below ventral margin of pectoral base; vertebrae 26–29 + 79–86 = 106–115; occipital (supratemporal) commissure well developed, with tubular passage across parietals and three occipital pores; two lateral extrascapulars; four postorbital pores; eight suborbital bones, with eight suborbital pores.

Eucryphycus californicus
(Starks and Mann, 1911)

DIAGNOSIS.—As for genus.

COUNTS AND MEASUREMENTS.—Vertebrae 26–29 + 79–86 = 106–115; D 97–108; A 82–89; P 13–15; pelvics absent; C 9–10; pseudobranch filaments 3–4; gill rakers 1–3 + 7–13 = 8–16; branchiostegal rays 6; vomerine teeth 2–11; palatine teeth 5–17; premaxillary teeth 9–27; dentary teeth 11–27. Following measurements in percent SL: head length 12.0–17.6; predorsal length 15.1–19.9; preanal length 34.8–37.6; body height 6.9–9.4; pectoral fin length 6.3–8.8; caudal fin length 2.1–4.2. Following measurements in percent HL: head width 28.6–66.7; upper jaw length 35.9–49.0; pectoral fin length 44.7–59.3; body height 39.2–77.9; snout length 15.1–18.5; eye diameter 15.9–24.3; gill slit length 30.0–35.5; interorbital width 8.0–9.6; interpupillary width 24.0–34.7. Pectoral base/length ratio 30.6–43.0.

DESCRIPTION.—Head moderately large, ovoid, early juveniles with longer heads than adults (17.1–17.6% SL at 35–42 mm SL; 12.0–15.7% SL over 60 mm SL). Adult males over 190 mm SL with longer heads (14.3–15.7% SL) than similarly sized females (12.0–13.8% SL). Widest part of head midway between eye and gill opening, but no sexual dimorphism in width detected, despite great variation noted above. Body relatively elongate, laterally compressed, but more rounded in largest adults. Tail greatly elongated, increasingly laterally compressed posteriad. Skin firm, covering vertical fins. Scales minute, cycloid, imbedded, covering body including ventral surface of abdomen and tail; scales present on vertical fins, extending on dorsal to about ¾ its height, and on anal to about ½ its height. Scales absent in 35–42 mm SL specimens; those on body of next largest (52 mm SL) reach anteriorly to just behind pectoral fin margin and extend from dorsal base to abdomen. Lateral line mediolateral (Andriashev 1954), complete, extending from just posterior to fourth postorbital pore to tail tip, not bowed anteriorly. Eye moderate, rounded in juveniles, more ovoid in largest adults; eye longer in relation to head in juveniles than adults. Nostril single, at snout tip, nasal tube just reaching upper lip. Pectoral fin moderately large, middle rays longest; juveniles with relatively longer fin than adults; posterior margin evenly rounded, its origin below body midline; pectoral base extending ventrally onto abdomen; ventralmost rays thickened and very slightly excised at tips. Gill slit extending below ventral margin of pectoral base.

Mouth terminal, lips without lobes. Mouth moderately large, upper jaw extending to vertical through posterior margin of eye in adult males, with jaw length 42.1–49.0% HL; upper jaw extending to middle of eye or slightly beyond in adult females, with jaw length 35.9–37.9% HL. All sizes and both sexes with two rows of small, conical teeth on anterior portion of premaxilla, blending into single, posterior row. Juveniles with two rows of teeth anteriorly on dentary, adults with three rows, blending into single posterior row. Outer, anterior teeth of both jaws longer and sharper in adult males than females. Teeth relatively numerous on vomer and palatine bones in adults; palatine teeth in two rows anteriorly in adults.

Cephalic lateralis pores moderately enlarged, rounded, relatively larger in smallest juveniles; pore system relatively complete, numeric variation in pore counts seen only in suborbital canal. Three occipital (temporal) pores across nape. Interorbital pore absent. Two pair of nasal (anterior supraorbital) pores, one set anteromesial to nasal tube, the other set posteromesial. Eight preoperculomandibular pores, four emanating from dentary, one from anguloarticular, and three from preopercle. Eight, rarely seven, suborbital pores, six emanating from ventral ramus of suborbital bone chain and one or two from ascending ramus (when seven pores in canal, uppermost absent). Four postorbital pores present, emanating from frontal (first), pterotic (second), between anterior and posterior lateral extrascapulars (third), and from end of posterior lateral extrascapular (fourth). Parietal bones large, meeting in midline, with well developed tubular canal, presumably representing fused tabulars, passing commissure (Fig. 1B). Supraoccipital relatively small, nearly

articulating with exoccipital. Postorbital commissure a tubular passage through frontal, sphenotic, pterotic, and extrascapulars.

Palatal arch reduced, ectopterygoid and mesopterygoid not overlapping half anterior and dorsal margins of quadrate (Fig. 2B). Hyomandibular posterior ramus not elongated. Posterior surface of opercle poorly ossified. Metapterygoid relatively small.

Ceratohyal-epihyal juncture smooth; cartilage-filled space between bones (Fig. 3B). Branchiostegal rays six: four articulating with ceratohyal and two with epihyal. Ceratobranchial five dentigerous; three pairs of infrapharyngobranchials and tooth plates. Gill rakers blunt, triangular, sharper and longer dorsally; largest specimens with 3 epibranchial rakers and 12–13 on ceratobranchial.

Posttemporal ventral ramus well developed (Fig. 4B). Supracleithrum forked at posterior end. Cleithrum without dorsal lamina. Scapular foramen enclosed; scapular posterior ramus well developed. Single postcleithrum present. Four ossified actinosts bearing 13–15 pectoral fin rays. Pelvic fins absent; pelvic bones normal size.

Precaudal vertebrae asymmetrical anteriorly, usually 27–28. Caudal vertebrae and posterior precaudals symmetrical; caudal vertebrae usually 80–84. Epipleural ribs on vertebrae 1–11, occasionally to vertebra 14. Pleural ribs on first through ultimate precaudal vertebra. Dorsal fin origin associated with vertebrae 4–6, usually with fifth, with no free pterygiophores. All dorsal fin elements soft rays. Three or four anal fin pterygiophores inserted anterior to haemal spine of first caudal vertebra. Last dorsal ray associated with third or fourth preural vertebrae. Last anal ray associated with second preural vertebra; usually two anal rays attached to its associated pterygiophore, which is fused to haemal spine. Caudal fin rays 9–10, with 2 epural rays, 4 upper hypural, and 3–4 (usually 4) lower hypural rays.

Palatine membrane weak, not reaching anterior edge of vomer. Three to four relatively long pseudobranch filaments. Two nublike pyloric caeca.

Fresh coloration uniformly dark orange, with somewhat rust-colored head. Throat region, branchiostegal membranes, and abdomen light orange (persimmon).

Distribution and Habitat.—Known from off San Diego northward to Monterey Bay, California, from 73 to 545 m. Habitat is drifting masses of decomposing seaweed, or similar refugia, which attracts its major prey, gammaridean amphipods. Both very young fish (35 mm SL) and adults have been taken in this habitat in seaweed-baited "habitat traps" (Kliever 1976; Cailliet and Lea 1977).

Etymology.—From the Greek *ευκρῦφαῖος* (well hidden) and *φῦκος* (seaweed), alluding to its habit of hiding in masses of drifting seaweeds. Gender: masculine.

Discussion

As stated earlier, membership in *Maynea,* recognized here as monotypic, has involved species currently placed in five genera. Characters used by previous workers, taken as generic-level similarities, usually have been primitive within Zoarcidae as I defined it (Anderson 1984*a*). These include gill arch features, dentition, squamation, lateral line morphology, pectoral girdle and fin architecture, and the caudal skeleton.

Maynea puncta belongs in a group of nine endemic South American genera characterized by a single synapomorphy: the interdigitating ceratohyal-epihyal articulation (Fig. 3A). Further, *Maynea* is allied with its sister genus *Phucocoetes* Jenyns, 1842, by two other synapomorphies: the elongated posterior ramus of the hyomandibula and the restricted gill opening. *Pogonolycus* Norman, 1937, placed with this group by Anderson (1984*a*) may have greater affinity with the problematical *Oidiphorus* McAllister and Rees, 1964 (Anderson in prep.).

Eucryphycus belongs in a group of seven widely distributed deep-sea genera characterized by a great attenuation of the body and tail, with concomitant vertebral increase, head-pore enlargement, and palatal-arch reduction. This group includes *Lycenchelys* Gill, 1884; *Lycodonus* Goode and Bean, 1883; and similar species groups. Phylogeny within these groups has not been demonstrated and generic relationships are still unclear because of the current rarity of specimens in museums and incomplete knowledge of their anatomy, as well as the homoplasious distribution of major features of the group (Anderson 1984*a*, fig. 15). Nevertheless, it is clear that *Maynea* and allies sprang from a lineage distinct from that of *Eucryphycus* and its allies.

Acknowledgments

This study is dedicated to the memory of the late Ed O'Connor, fellow student and *Eucryphycus* stalker, who helped kindle in me an interest in eelpouts and other fishy things during the early

days of our studies at Moss Landing Marine Laboratories. It was Ed who convinced me to take part in the December 1972 cruise that captured the first Monterey Bay *Eucryphycus* reported by Cailliet and Lea (1977). A great deal of appreciation and thanks over the years on this and other projects is owed to Greg Cailliet and Bob Lea.

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